WORLD HEALTH

THE MAGAZINE OF THE WORLD HEALTH ORGANIZATION · MAY-JUNE 1991

Inter-Health and Diabetes

Cover. A happy and sportive person "kicks the bad habits" as WHO launches a global attack on life-styles dangerous to health

Cover design by Peter Davies

IX ISSN 0043-8502

World Health is the official illustrated magazine of the World Health Organization

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World Health appears six times a year in English, French, Portuguese, Russian and Spanish, and four times a year in Arabic and Farsi. The German edition is obtainable from: German Green Cross, Schuhmarkt 4, 3550 Marburg, FRG.

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The health of nations is changing

by Hiroshi Nakajima

Director-General of the World Health Organization

Until quite recently, the world presented two distinct health profiles. On the one side, the industrialized countries, having triumphed over the major communicable diseases of the past, were directing their high technology medical research activities towards finding cures for cancer, cardiovascular diseases, and other chronic ailments of "modern" society. On the other side, the developing countries were still struggling with endemic communicable diseases, malnutrition and conditions of poverty, and paying little attention to diseases thought to affect mainly the "affluent" countries.

WHO/T. Farkas

Today, on the eve of the twenty-first century, we see that the world health situation is no longer that clear-cut and simple. Many developing countries have made great progress in combating infectious diseases and malnutrition, thereby improving the length and quality of life of their people. But rapid urbanization and industrialization in those same countries, together with the adoption of modern life-styles that adversely affect health, have brought new problems in the form of chronic noncommunicable diseases. In many developing countries these "new" problems are arriving before the "old" ones are resolved, leading to a double burden of disease. At present, noncommunicable diseases are responsible for 70–80% of deaths in the developed countries, and have reached the level of about 40% in the developing world.

Socioeconomic progress has thus clearly improved the living conditions of hundreds of millions of people. It is ironic that, at the same time, behaviour and life-styles that are powerful enemies of health are being promoted and adopted. Scientific evidence clearly shows that prevention of the major noncommunicable diseases is only possible if there is a shift in emphasis from the disease itself to the risk factors related to development of the disease. Some of these risk factors, such as air pollution, cannot be controlled by the individual; they need community or government action. Many others are related directly to personal choice of behaviour, and thus become the responsibility of each individual.

A clear example of a disease-provoking habit is cigarette smoking, which causes 3 million people to die from lung cancer every year. Cigarette smoking is not only a risk factor for lung cancer but also leads to heart disease, stroke, and hypertension. In addition, different risk factors often act in combination to produce a single disease, in the way that wrong diet, lack of exercise, cigarette smoking and stress all contribute to cardiovascular disease.

The recent past has shown us that many of the diseases widespread in both developing and developed countries have their roots in factors that human beings themselves have created and can control. WHO, in collaboration with governments, scientists, and nongovernmental organizations, has decided to launch a combined, comprehensive drive against the major risk factors. At an international gathering in Helsinki in 1990, "Inter-Health" was born.

Healthy behaviour must start from birth. Thus, the diseases and disabilities that prevent many of us from reaching old age in good health can be delayed or avoided. The medicine of tomorrow is prevention, in line with the proverb, "An ounce of prevention is worth a ton of cure."

H. Nakajima

Hiroshi Nakajima, M.D., Ph.D.

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A hope for people with diabetes

by Joseph J. Hoet

More than 50 million people in the world today suffer from diabetes. Although the disease is on the rise in both developed and developing countries, it is a far greater problem in developing countries, where it may in extreme cases affect 30–40% of adults, against 2–4% in the industrialized world. Diabetes may lead to severe complications including heart and kidney disease and blindness. However, there is increasing evidence that early diagnosis, prompt and effective treatment, and education of diabetics in the management of their condition can lead to substantial reductions in these complications, with consequent improvement in quality of life, as well as reduced health care costs.

What hope is there for people with diabetes or at risk of developing it that significant action will be undertaken on a sufficiently large scale to alleviate their sufferings?

WHO's Member States recognize diabetes mellitus as a chronic, debilitating and costly disease that represents a significant burden on the health services of countries all over the world. They have therefore requested the Director-General to strengthen activities in the field of diabetes, to mobilize the collective resources of collaborating centres, and to foster relations with the International Diabetes Federation (IDF) and other nongovernmental organizations so as to expand the joint prevention and control activities. The Federation, which has had diabetes care for all as its main concern since its foundation in 1951, has built up a solid partnership with its member associations in 90 countries.

A message of hope

Acting through its seven regions, the IDF has initiated a vast programme of diabetes awareness. Together with WHO, it is sponsoring World Diabetes Day on 27 June 1991, which is the cornerstone of a massive public awareness campaign about diabetes. A message of hope will be brought to the world, and to all people with diabetes or at risk of developing it. Insulin, the traditional treatment for diabetes, is not readily available to patients in more than half of the world, because it is not properly distributed or people cannot afford it. The campaign will focus on new advances, as well as education and preventive measures, in order to promote information and awareness about the need for treatment, education, prevention and research in the field of diabetes.

To reflect the importance of these global needs, the IDF has included in its action programme a leadership course on the planning and delivery of diabetes health care. The objective is to create a group of dedicated professionals committed to improving diabetes care and treatment, and motivated to do so in their own settings. Update courses for doctors involved in primary health care are being organized in different centres around the world. The IDF considers this an important part of a continuing education process, aiming at improv-

Diabetes may last a lifetime; 20–30% of diabetics need two daily injections of insulin.

WHO/T. Farkas

ing the standards of care offered to persons suffering from diabetes, and integrating the disease into the general health care scheme—the Inter-Health approach.

The importance of coordinated action cannot be overemphasized. For instance, there is an increasing need for human and financial resources which the private sector is eager to offer. Major sponsorship by large industrial enterprises and bodies such as the Lions and Rotary Clubs has stimulated crucial advances in the field of diabetes control.

One of the many initiatives taken to pursue WHO's objective began in Italy in 1989, when the European regional offices of both the IDF and WHO met to assess the diabetes situation, and enshrined their common goals in a single document. This is known as the St Vincent Declaration, whose subtitle expresses the wide scope of action to be undertaken: "Diabetes mellitus in Europe: a problem at all ages, in all countries: a model for prevention and self-care".

Future action

Researchers, clinicians, volunteers and delegates from 98 diabetes associations, as well as persons suffering from diabetes, will convene in Washington D.C. in June 1991 to participate in the 14th Congress of the Federation. World experts, representatives of nongovernmental organizations and the private sector, as well as delegates of government agencies, universities and medical schools, all of them committed to meet the challenges of the care of diabetics and research in diabetes, will use this occasion to further the global efforts to conquer the disease in the near future.

The International Diabetes Federation believes it has made a positive response to the growing need for action. It values the trust it has received, and is grateful to WHO, its Member States and its Director-General, Dr Hiroshi Nakajima, for recognizing the importance of diabetes. The Federation and its members worldwide will urge governments, universities and the private sector to work with intelligence, devotion and humanity in order to improve the lives of persons with diabetes throughout the world. ■

Professor Joseph J. Hoet is President of the International Diabetes Federation, 40 Washington Street, 1050 Brussels, Belgium.

What is diabetes?

Diabetes mellitus is gaining ground throughout the world, in both developing and developed countries. It is a chronic disease caused by inherited or acquired deficiency in the production of insulin by the pancreas, which results in an increased concentration of sugar in the blood. Insulin-dependent diabetes appears early in life and can usually be regarded as hereditary, even though the mechanism by which it passes from one generation to the next has not yet been fully explained. Children who have two diabetic parents run a 20% risk of becoming diabetic themselves.

Another type of diabetes, which is noninsulin-dependent, appears later in life, is often concomitant with obesity and is mainly caused by inappropriate diet.

The classic symptoms of diabetes are excessive secretion of urine (polyuria), great thirst (polydipsia), weight loss in spite of excessive appetite (polyphagia), and a feeling of lassitude. Sometimes no early symptoms appear, and the disease is only diagnosed when routine examination shows sugar in the urine or a raised blood sugar level.

Well-treated diabetic individuals do not show any outward signs of the disease and should be regarded as in good health. However, excessive sugar in the blood vessels leads to vascular problems, and sooner or later complications are liable to occur in the circulatory system.

Eye impairment is one of the vascular complications that diabetics fear most. The disease is a major cause of blindness in the world, even though there are few diabetic persons who completely lose their sight. It also produces reduced skin sensitivity that may lead to severe ulcerations in the limbs and eventually bring about another very severe complication: gangrene leading to amputation.

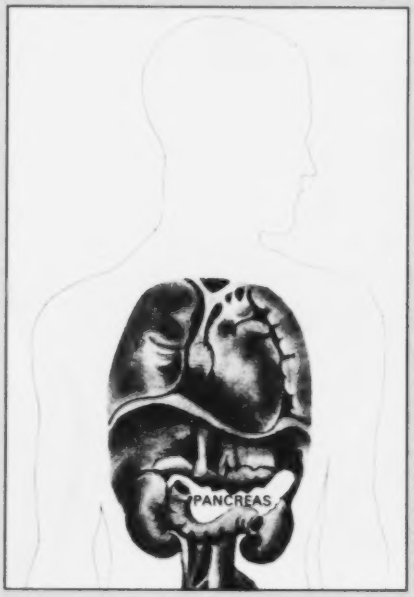
Insulin

Insulin is an essential treatment for subjects with insulin-dependent diabetes and is also required by a proportion of noninsulin-dependent diabetic individuals. It compensates for the lack of endogenous insulin resulting from defective functioning of the pancreas. Insulin is traditionally administered through injections, mostly twice a day, usually given by the patients themselves; at present 25–30% of diabetics require this kind of treatment. New technology, e.g., the insulin pump, is attempting to bring increased comfort and improved metabolic control, with the computer-controlled miniaturized system constantly monitoring the patient's needs and injecting insulin as required. This is particularly the case with young patients, as those who contract the disease in adulthood often retain a residual capacity for producing insulin.

Genetic engineering is expected to make it increasingly easy to produce large quantities of high-quality insulin through bacterial culture.

Education is indispensable

Diet, physical exercise, and drugs are three cornerstones of diabetes treatment; the fourth is education.



Drawing by Peter Davies

A deficiency of the insulin-producing mechanism in the pancreas lies at the origin of diabetes.

A strict diet is essential, since even with insulin treatment the blood sugar level can only be kept within reasonable limits by controlling food intake. In many cases obesity leads to diabetes, and in fact most people who contract diabetes in adulthood are overweight. For many of them, a simple reduction in weight can make other treatment superfluous. Avoiding and treating obesity will reduce the risk of diabetes in older people with a family history of diabetes, and in women who have given birth to babies weighing more than 4.5 kg at birth.

Education is just as important for diabetics as diet, drugs and exercise, since treatment cannot be effective unless the patient understands the disease and takes positive steps to combat it. Thanks to the acceptance of these basic principles, the life expectancy of diabetic individuals in some countries is now practically the same as that of the general population.

C.V.

WHO and diabetes

by Hilary King

The highest prevalence rates of diabetes are to be found in developing nations. In extreme cases one-third or more of the adult population suffers from this disease, and one-tenth is not unusual in urban areas of the developing world. Diabetes can no longer be considered a disease of affluent nations alone; it has become a global problem, a major epidemic of the late twentieth century, and one which shows no sign of abating.

Chronic noncommunicable diseases arise as major killers and causes of disability in many areas of the world. WHO is developing several types of approaches to tackle them. Firstly, there is the study of the diseases themselves—cancer, cardiovascular diseases, rheumatic diseases, diabetes mellitus—and of the ways that exist to control them. Secondly, programmes concentrate on different risk factors which confront people in their social and cultural environment, and which may be detrimental to their health, such as tobacco or alcohol. Thirdly, different programmes seek to promote health in particular groups of society, such as schoolchildren, the elderly and the workforce. Finally, WHO in 1990 launched the Inter-Health programme, which is an integrated approach to explore the possibility of controlling simultaneously several risk factors like obesity, lack of exercise and inappropriate diet.

Diabetes has a strong genetic component, but it also stems from social, economic, behavioural and environmental factors. There may be fundamental differences between developed and developing countries in this respect, but there is also a predictable pattern of health change in most populations where infectious diseases tend to decline as economic conditions improve and noncommunicable diseases become major causes of disease and death. In some cases, high rates of infections and noncommunicable diseases coexist, leading to the so-called "double burden".

Diabetes, particularly the noninsulin-dependent form, is one of the most important noncommunicable diseases to have emerged with industrialization and the subsequent changes brought about in modern societies.

The three principal components of WHO's strategy to tackle the rising rates of diabetes are (1) research, to discover the distribution and determinants of the disease, and new technology for its treatment; (2) education, to prevent the disease from developing unnecessarily and to help diabetic children or adults to live with their disease; and (3) strengthening national health services, to control the disease more efficiently. WHO will act as a catalyst, by providing the expertise and resources needed to initiate national programmes. Strong commitment on the part of the national government concerned is also required.

A World Health Assembly resolution in May 1989 invited Member States of WHO to assess the national importance of the disease and to take measures to control it. To assist in this process, WHO recently coordinated the formulation of guidelines for the development of national diabetes programmes. These will be made available to health planners in all countries and will also be used in training courses on management of services and programmes for diabetes.

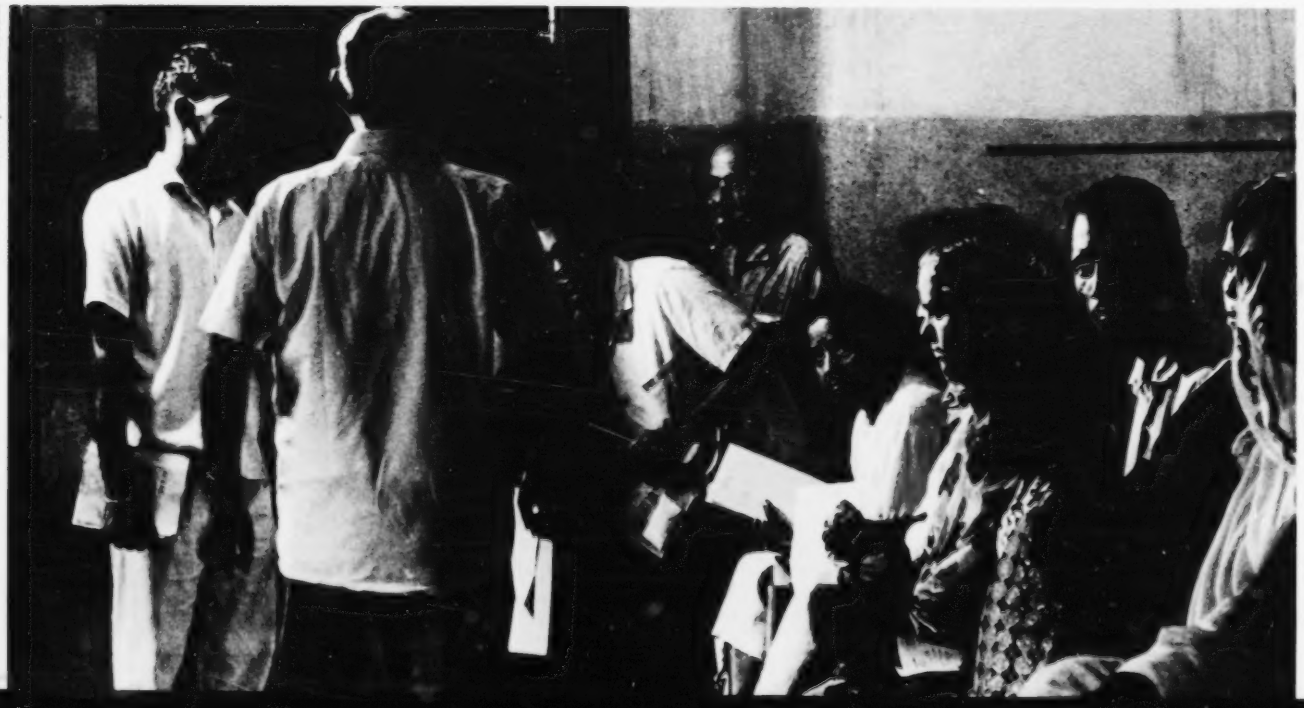
A vigorous campaign to strengthen national programmes in European countries is being put into effect by WHO's Regional Office for Europe, in collaboration with the International Diabetes Federation (IDF). The St Vincent Declaration on diabetes research and care in Europe has set goals and five-year targets. It is hoped that similar initiatives may be possible in other regions in the future. The first World Diabetes Day, co-sponsored by WHO and the IDF, will be held on 27 June 1991. It will draw unprecedented attention to persons with diabetes all over the world.

Research is vital

The frequency of diabetes and its severe complications need to be fully documented. Epidemiological informa-

Waiting-room of a diabetes clinic in India. A big stumbling-block to controlling diabetes in the Third World is case-finding.

WHO/A. S. Kochar



WHO/Finnish Diabetes Centre

Children learning how to check their own blood glucose levels in a Finnish diabetes centre. This training will make it easier for them to handle their condition throughout their lives.

tion is especially valuable at a time when there is evidence that the prevalence and incidence of the disease are on the increase in many parts of the world. But epidemiology serves other purposes: to seek information on the causes of the disease with a view to preventing it; to determine the factors that may retard, or on the contrary accelerate, the development of complications; to evaluate the effectiveness of treatments and public health interventions; and to provide information for the rational planning of health services.

Back in 1970, the WHO Multinational Study of Vascular Disease in Diabetics investigated apparent differences in rates of vascular complications of diabetes. More than 6500 diabetics were recruited in 13 countries around the world to participate in this project, which was coordinated by a London-based WHO collaborating centre for the study of long-term complications of diabetes. While the study on complications of diabetes is now over, the follow-up on mortality trends is still continuing.

Built upon the experience and knowledge gained from this study, a second multinational project, called Diabetes Mondiale (DIAMOND), was launched in January 1990. This will monitor the incidence of and mortality from diabetes in childhood up to the year 2000. Regional training courses in epidemiology and public health aspects of diabetes, and a study of the economic implications of childhood diabetes will also be undertaken as part of the DIAMOND project.

Between 1964 and 1985, WHO convened two expert committees and one study group on diabetes mellitus. These provided a clear account of progress in diabetes research, education, and health care over the last two decades. Their findings and recommendations were published in WHO's Technical Report Series. They studied the natural history of the disease, its prevention and control, as well as conditions of employment of diabetics, and diabetes research; and they introduced guidelines for the diagnosis and classification of the disease, including the inadequately understood form of malnutrition-related diabetes mellitus.

Wanted: diabetes education

Considering the importance of public education in any health activity and especially in primary health care, there have been to date comparatively few such programmes in the field of diabetes, and little is yet known about their potential impact. There is certainly scope for demonstration projects aimed at testing the efficacy of public education campaigns in severely affected communities. Furthermore, several components of the integrated approach for the prevention of non-communicable diseases are also of relevance to diabetes.

Educational activities may be aimed not only at the public, but also at non-specialized and specialized health workers. WHO has provided active support and sponsorship for a number of paramedical training courses on diabetes, many of them organized and coordinated by WHO collaborating centres.

In 1981, 1983, 1987 and 1990, international seminars for health professionals on the epidemiology and public health aspects of diabetes have been organized by WHO and co-sponsored by the IDF. A subregional seminar was held in Africa in 1989.

In progress: national diabetes programme development

Along with the development of guidelines for national diabetes programme development, WHO is also trying to involve professionals of sectors outside the health field with a view to training national teams responsible for the diabetes programmes in their countries. These teams will consist of the national programme coordinator or manager, epidemiologists and biostatisticians, health educators and other key health staff. The first of these intersectoral courses is planned to take place in Geneva this year.

Looking ahead

Diabetes is a growing threat to global public health, to which WHO is paying increasing attention. Our strategy is based mainly on the strengthening of national health services, research and education. It will be essential to adapt the guidelines for diabetes programme development to the local situation, to build on the framework of existing health care systems, and develop appropriate technology. While WHO can act as a catalyst for these activities, national health services should aim at self-reliance in the long term. ■

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Diabetes in the Third World

by Thomas Oshotayo Johnson

Health in the Third World is a difficult commodity to safeguard in the economically disadvantaged environment of those countries. The disease scene is dominated by acute infections, communicable diseases, malnutrition, problems of mother and child health, and soaring population. In such a milieu, life expectancy at birth is short and until recently the chronic noncommunicable diseases were not seen as a problem.

Over the last three decades, these circumstances have been changing and Third World communities are now experiencing the additional burden of diseases like diabetes mellitus and high blood pressure. In some cases, change is occurring at an alarming rate.

In two separate reports, WHO noted the increasing occurrence of diabetes in the developing world and gave recognition to a type of diabetes which affects large numbers of young people in poor communities in tropical developing countries. In 1989, the World Health Assembly noted the growing burden that diabetes imposes on public health services, especially in developing countries. It invited member nations to assess the national importance of diabetes and to carry out population-based measures, appropriate to the local situation, to prevent and control diabetes.

Through WHO's initiatives, together with the unflagging activities of the International Diabetes Federation (IDF), more attention is being directed to the problem of diabetes globally and not just as a problem of the developed world.

The current world population of people with diabetes is estimated to be over 50 million. About one half of them live in the developing world. Precise occurrence rates for many developing countries are not available, and in general the quality and quantity of disease reporting are weak.

Many reports on the frequency of occurrence of diabetes and the extent to which it causes premature death or severe long-term disability have come from hospital-based information. These reports have pointed out the emergence of the disease in the population and have been used to describe the evolution of the disease over time.

Community-derived information on occurrence rates has made something of a breakthrough in the last 20 years. Agreement on the criteria for diagnosing the disease has made comparisons possible among different populations and ethnic groups, and has highlighted the need for more studies to define the national importance of diabetes. In developed countries, for every person known to have the disease there is at least one other who has the disease and is not known.

The situation in developing countries is vastly different. For every known diabetic there may be up to four others yet undiagnosed. Diabetes now affects a higher proportion of persons in many developing countries than it does in Western countries, where two or three per cent of the population are affected. This trend has been linked with increasing life expectancy, rural–urban shifts, moves from traditional to modern life-styles, changes in diet, and physical inactivity and obesity.

The situation of diabetes in developing countries is providing newer and further insight into the role of genetic and environmental factors in the development of the disease.

Latin America. In the Americas, south of latitude 30°N, diabetes has been recognized as a public health challenge affecting between one in 40 and one in 20 of the adult population. The area

WHO/A. S. Kochar

Eye examination in India. Diabetes can result in partial or complete blindness, yet in the Third World only one diabetes case in four is diagnosed.

comprises a mix of developed and developing countries.

Africa. Diabetes is less common among black Africans than among Caucasians and black Americans, but reliable population-based studies are scarce. In the United Republic of Tanzania, where an integrated approach to non-communicable diseases (NCD), including diabetes, was initiated some years ago, and in Nigeria, where a nationwide NCD survey is going on, an Inter-Health approach is being tested to evaluate the real magnitude of certain chronic diseases and implement appropriate strategies for control and prevention. Diabetes is far from being a problem of minor public health importance, and is commoner in African countries north of the Sahara than in those to the south.

The Middle East. In the Arab countries, diabetes rates in the large communities are now level with or slightly higher than the Western rates. The situation in Malta is interesting: one in 12 of the adult population has diabetes and a national diabetes programme is in place to learn more about the natural history and care aspects of the disease.

South-East Asia. The frequency of occurrence of diabetes in the Asian region varies between countries and ethnic groups. In all groups it is at least 2% and may be as high as 5% in some countries. The disease affects Indians more commonly than Malays and Indonesians, and much more so than the Chinese in the same communities.

Oceania. Diabetes has recently emerged as a serious health problem in the Pacific region. The Micronesian population of Nauru has one of the highest rates for diabetes yet recorded: every other adult person (one in two) in this population has diabetes. Although diabetes was known in China more than 2000 years ago, a nationwide survey in the early 1980s showed that it is relatively uncommon among the Chinese compared with Western countries, Japan and other Asian countries.

The acute onset and often severe type of diabetes which affects young people and requires life-long administration of insulin to maintain life (IDDM) appears to be relatively rare in most developing countries. It is probable that many children who develop it die undiagnosed, especially if they live in isolated areas with poor medical care. Noninsulin-dependent diabetes (NIDDM) constitutes the great majority of cases of diabetes worldwide. A slow, savage killer, its complications still constitute a major cause of early death among those who suffer from it in the developing world.

WHO/P. Almasy

Adults learning to read and write in Mexico. Low literacy levels are a handicap for education programmes designed for diabetics, and leave the patients themselves at a disadvantage.

In large areas of the tropics a rather rare form of the disease has been recognized as malnutrition-related diabetes mellitus (MRDM). To many doctors in these areas, this type of diabetes is a real entity although it still needs clearer definition and its occurrence rates in the community have yet to be described.

Problems of diabetes care

Regrettably, awareness of the burden of diabetes in the developing world is very low, and this causes serious social and cultural problems. The plight of the individual with diabetes is often a sad one. Low literacy levels have worked against effective diabetes education of the patient and the family, and unfair discrimination in society at large may be serious enough to prevent him or her leading a full social life. Such people are often ashamed to disclose their ailment because of the social stigma attached to it, and women have reduced prospects of acquiring a husband.

It is in the area of care and management that the sufferers are hardest hit. Developing countries have limited numbers of health workers and uneven distribution of the available manpower. Low per capita earnings and the competing claims of many sectors result in the annual expenditure on health falling below the recommended levels. It is against this background that competition for priority attention among specific groups of health problems has to be seen.

Since the Declaration of Alma-Ata, developing countries in particular have

adopted primary health care (PHC) as the essential element in their national health care systems, and it is within the framework of PHC that community care and control programmes for diabetes are best applied. Such an approach should serve as a prototype for the other chronic diseases.

Material resources for diabetes care are lacking and essential supplies (insulin, needles and syringes, oral anti-diabetic drugs, and materials for monitoring control) are scarce. Much of the insulin produced in the world is from animal sources. Technological advances have led to a theoretically limitless ability to produce insulin. Despite this, people still die from want of insulin in many developing countries.

During a recent IDF/WHO leadership course on planning and delivery of diabetes health care, held in Louvain, Belgium, one of the 32 participants, all from the developing world, commented: "If I see a child with diabetes today, I am almost certain that I will not see him again five years later because he will be dead by that time. The main cause of this tragic death is simply the non-availability of insulin". At the same course, participants were asked: "If you prescribe insulin for a patient, how many of you can guarantee that the insulin which is necessary to sustain life will be available and affordable that day?" A majority could not guarantee this essential drug for their patients.

One of the recommendations of the Second WHO Expert Committee on Diabetes (1980) was that the adequate and continued availability of insulin to children and adults with diabetes everywhere must be assured by national guarantee. This recommendation has yet to be met by many governments in developing countries. For a start, customs duties and other tariffs could be reduced or abolished on these essential items, as has recently been the case in the Dominican Republic and Paraguay.

Many specialists believe that diabetes rates in developing countries will inevitably reach or exceed the levels in developed countries, and that this is part of the unwelcome price to be paid for industrialization and socioeconomic development.

We should not wait until all the causative factors for diabetes have been unravelled before putting in place strategies for prevention and control. The potential for prevention exists now in developing countries. Those aspects of traditional life-styles that are known or thought to be protective for the disease should be promoted. Preventive measures for other conditions may also protect against diabetes.

More studies are needed of the possible causative roles of protein-deficiency malnutrition as well as environmental toxins in MRDM of the tropics. Prevention of childhood malnutrition is already a part of child survival strategies in developing countries.

Provided countries have a correct appreciation of the problem and can obtain the political will and commitment and basic health administrative skills, much that is appropriate for diabetes and other chronic disease control and prevention can be effected by developing countries themselves within an efficient PHC structure.

Intersectoral collaboration and participation of nongovernmental organizations like national diabetes associations, the pharmaceutical industry, and the private sector—galvanized if necessary by intergovernmental support among developing nations and between developed and developing countries—*can* achieve these goals.

Health education is a cornerstone of diabetes prevention, care and control. This should be targeted, using appropriate technology, towards the individual patient, the family, the community, health care personnel, health administrators, policy-makers and politicians in order to raise awareness for action now.

This particular stitch in time will save nine in the future! ■

WHO/C. Stauffer

A health worker in Nepal checks the growth progress of a small child. But if the child is diabetic, what will be its chances of survival?

Professor Thomas Oshotayo Johnson is with the Department of Medicine, Lagos University Teaching Hospital, PMB 12003, Lagos, Nigeria.

Insulin—the economic facts of life

Insulin is the life-saving liquid that many people with diabetes rely on, and they need it every day. Though many of them have a regular supply, many others do not—and some cannot get it at all.

From Ethiopia...

A doctor in Ethiopia writes that many diabetes sufferers in poor countries die because they do not get insulin. Diabetes affects about one in a hundred Ethiopians, and about 40% of the diabetic patients depend on insulin in order to survive. The government health services make every effort to supply insulin regularly to hospitals needing it but there are often delays, as all insulin is imported and foreign currency is scarce.

In Ethiopia, all medication is given free of charge to patients who have poverty certificates, which are usually granted if family income is less than 50 birr (US$ 24) a month. However, most patients are not poor enough to qualify for a poverty certificate, although they are too poor to afford the insulin they need.

In August 1990 the diabetes clinic at our correspondent's hospital, which follows regularly more than 1200 Ethiopian diabetic patients, received a gift of over 4000 vials of insulin from the International Diabetes Institute in Australia. "When we receive a gift of insulin such as this", the doctor writes, "we use it for any diabetic patient without insulin if there is a shortage in the city. We give priority to patients with low incomes, particularly if they have the added burden of other chronic illnesses like hypertension or have more than one diabetic patient in the family. Then there are the emergency cases, for example when a poor farmer eligible for free treatment has travelled a long way and does not have the proper documents with him."

Gifts of insulin are extremely useful and are greatly appreciated. This particular gift arrived at a crucial time when there was almost no insulin left in the central store, so many patients who might otherwise have developed complications or died were able to carry on thanks to this expression of international solidarity.

"On behalf of all people with diabetes who have benefited from donated insulin, I should like to express gratitude to everyone interested in the problems of insulin-dependent diabetics who have difficulty in obtaining this basic necessity", writes our Ethiopian colleague.

...and Denmark

The story told by a lady in Copenhagen reveals a different aspect. "I have had diabetes since 1980 and during the last six years I have tried treatment with multiple daily injections and different insulin pumps. Treatment by the ingenious insulin pump has been the best for me but unfortunately it is also the most expensive. The pump injects insulin constantly and is even able to adjust the amount injected according to my body's need. This has given me a feeling of well-being unattainable with other treatments, as being able to control the disease has allowed me to live a life that hardly differs from that of a healthy person.

"Of course, I would prefer a treatment that does not require a needle to be permanently in my skin. I should also like to be free of my constant awareness of the mechanical functions and of my perpetual fear of technical errors. I have experienced failures that could have been fatal: fortunately I am acutely aware of my symptoms and I know exactly what to do and where to seek help quickly.

"When you have a chronic disease it is very difficult to be tolerant. I know perfectly well that the majority of people in the world have difficulty in obtaining even their most simple needs. My social conscience could be said to be in a bad state."

An insulin pump consists of a small microcomputer, a battery, a small pump, and a reservoir for the insulin. It is worn outside the body and is connected by a thin plastic tube to a needle inserted under the skin. The microcomputer calculates how much insulin is needed and instructs the pump to deliver the required amount at the right time. Even though they have been available for a number of years the pumps are not in common use, mainly because of their high cost and the need to be near a centre that can service the mechanism.

How you can help

If you would like to help persons with diabetes around the world we suggest you contact your National Diabetes Association. Over ninety countries have a national diabetes association; if you are not sure where to find yours, or if one does not yet exist in your country, you could write to the International Diabetes Federation, 40 Washington Street, 1050 Brussels, Belgium. (Telephone no. (322) 647 4414; Fax no. (322) 640 8565.)

If you would like further information on insulin redistribution schemes, you could write to Mr R. Raab, International Diabetes Institute, 260 Kooyong Road, Caulfield, Victoria 3162, Australia. (Telephone no. (03) 528 4295, Fax. no. (03) 528 3216.)

E.L.

WHO/Renaudeau

These diabetic patients receiving drugs at a dispensary in Senegal are the lucky ones. Throughout the Third World, at least half of such patients have no access to insulin.

The future is bright

by Frank Vinicor

Diabetes mellitus is a condition that imposes a tremendous health and societal burden worldwide, whether that burden is measured in terms of sickness, inability to function in daily life, use of health systems resources, costs or death. Given that insulin was discovered in 1922 and that optimism about finding a "cure" for a previously fatal disease rapidly followed, these facts are disturbing. But the great burden of diabetes *is* the present reality.

Nevertheless, there are many exciting and promising research developments which indicate that efforts in primary prevention (decrease disease development), secondary prevention (control abnormal metabolism), and tertiary prevention (limit damage from complications) will soon begin to reverse this burden, even in the face of an aging world population.

In the two major types of diabetes—insulin dependent and noninsulin dependent—genetic studies provide important lessons which may result in a reduction in the likelihood of developing diabetes. In insulin-dependent diabetes, genetically-based abnormalities in the body's immune system may result in "self-destruction" of the insulin-producing beta cells in the pancreas, with subsequent high blood sugars. (The pancreas is the large elongated glandular organ, situated behind the stomach, that secretes insulin and pancreatic juice.) The possibility of controlling the immune system to prevent beta cell destruction prior to development of high blood sugar or clinical diabetes is being investigated. Studies to identify and then modify environmental factors which unmask these destructive genetic-based immunological tendencies are also under way, and could result in significant decreases in new cases.

For the more common noninsulin-dependent diabetes (NIDDM), studies have found evidence of early resistance to insulin in fat and muscle tissue, and compensatory elevations in circulating insulin, providing an environment that is then conducive to heart and vascular disease. Both of these occur well before a high blood sugar and typical clinical signs of diabetes appear. So the possibility of identifying such pre-diabetic individuals and improving the tissue insulin resistance (which may be due to genetic variations in the proteins that transport glucose into cells) could result in fewer cases of NIDDM and one of its major complications—heart and blood vessel disorders. A third type of diabetes, called malnutrition-related diabetes mellitus, is being carefully and thoroughly studied to identify causative factors.

In secondary prevention, that is, controlling the raised blood sugar, blood pressure and blood fats, several new developments are generating excitement and optimism. They include insulin and insulin-like products produced by genetic engineering; innovative methods to deliver insulin — perhaps by liposomes (small fat spheres) or insulin pumps; newer varieties and classes of oral glucose-lowering agents, for instance those which reduce glucose absorption from the intestine; drugs which block the effects or consequences of high blood sugar, e.g., "aminoquinidine" which blocks formation of glucose-protein complexes; and a wide variety of new, effective high blood pressure and lipid controlling pharmaceuticals, some of them with particularly beneficial properties in diabetic patients. All these developments are very important for the present and future control of metabolic abnormalities, thereby decreasing the likelihood of complications in diabetes.

New treatment

If complications develop, can this burden be reduced through tertiary prevention efforts? It is in this area that much can be done *now* while new studies are being completed. Laser-based photo-coagulation to prevent blindness from diabetic eye disease; simple and inexpensive foot care procedures to prevent amputations; prenatal and perinatal diabetes care to prevent adverse outcomes of pregnancy—these programmes have been developed and validated as very important treatment opportunities. The role of protein restriction and/or specific anti-high blood pressure medicines to preserve kidney function is at present under study. The results will have important implications for the management of patients with diabetes.

WHO/Finnish Diabetes Centre

A diabetic tests his level of blood glucose. Those who are well motivated and knowledgeable about the disease are best able to live a normal life.

Cross-cutting all levels of prevention is the critical role of health education. Two particular aspects of this deserve mention. First, studies support the essential and positive role of the patient in his or her own care—the "activated" or "empowered" patient. Second, research is reminding us that changing behaviour is much more challenging and complex than simply providing knowledge. People's beliefs, attitudes, home and work environment, social characteristics and norms are all essential features of any effective health education programme. Educational research will no doubt provide guidance and advice on how best to develop effective health education opportunities, using these essential elements.

In fact, research already provides hope for reducing further the worldwide burden of diabetes. Much has been learned and is now being applied. Much more information will soon be available to help us in our primary, secondary and tertiary prevention efforts. ■

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Healthy feet in diabetes

by Jean-Philippe Assal

Diabetes mellitus is a disease that can have catastrophic effects on the organism as a whole. In diabetics it becomes difficult for the fatty tissues and muscles to stock and use sugar, which then accumulates in the blood. This excess is in part eliminated in the urine, but what remains damages the walls of the blood vessels, which thicken and weaken to the point where the smallest vessels tend to burst very easily. This damage to blood vessels is worsened if the person smokes, suffers from hypertension or has an excess of cholesterol. These risk factors—typical of so-called "diseases of civilization"—are present to the same degree, if not even worse, in the developing world. So, after 20 years, nearly 80% of diabetic patients suffer from eye lesions, 70% from problems of the nervous system, and nearly 50% from kidney disorders.

The excess sugar is also deposited in the nerve sheath, and this causes a progressive slowing down of nervous impulses, which may result in a progressive loss of sensitivity to pain, particularly in the feet. This in turn increases the risk of wounds and infections that pass unnoticed and can result in serious lesions. The most frequent are ulcers, called "diabetic perforating plantar ulcers", and gangrene. Either of these, if not treated, can make amputation of a limb necessary as the only means of saving the patient's life.

Amputation—a drama

Most diabetic persons who have to undergo amputation are aged over 60, so this disablement is added to other physical problems such as osteoarthritis, failing eyesight, and difficulties of coordination and balance. Patients lose their mobility, especially when the leg has to be amputated above the knee. Some move so slowly, for instance, that they haven't time to cross the road while the pedestrian light is at green.

For every step forward, they need to use three times more energy than a normal person. One of my own patients said recently that it took three times longer to visit me than before his amputation; as a result he could not come as regularly as he should for a check-up on his other leg and his prosthesis. This is a serious matter when you remember that the good leg risks the same fate if it is not kept constantly under surveillance. Unfortunately, amputation of both legs is needed in some cases of diabetes.

Drawing by Peter Davies

Correctly fitting shoes help to avoid gangrene and amputation.

Even putting on the prosthesis every day can entail a big struggle, or may require someone else's help. This is why a large number of amputees end up spending the rest of their lives in a wheelchair.

Psychologically, the loss of a limb is a personal and family tragedy. The person's body image has been assaulted; many patients never succeed in coming to terms with their mutilation and sink deeper and deeper into gloomy social isolation.

Prevention: when and how

More than 80% of amputations can in fact be avoided in diabetic patients who have neurological or arterial complications. This has been shown by studies in several centres in the USA and Europe. Yet the level could reach 100% if only the disease could be physiologically controlled from the moment it appears.

Prevention is the Number One ally of medicine. It is necessary to know what is happening prior to the appearance of a diabetic ulcer. It all starts with a loss of sensitivity to pain, which the physician ought to be able to diagnose very quickly by simple, cheap and effective methods. It is mandatory that the doctor and nurses examine the patient's feet at every consultation and make him or her well aware of the possible danger.

The patient must take special care in choosing shoes! The diabetic person cannot feel the chafing of tight shoes which may therefore cause lesions and consequent infection. Patients must learn to recognize the potential danger of tight shoes, a protruding nail, or splits in the leather, and even how to buy new shoes, preferably with the help of some family member who also has been taught what to look for. He should frequently examine the skin of the feet and note at once any corns, fungal infection or other small skin lesions, and should know how to care for these without using harmful products or instruments such as corrosive chemicals, razor-blades or files.

Without these simple preventive measures, lesions will go on developing under the skin but without causing pain. A non-diabetic person in this situation would be in such pain that he couldn't walk. This

progression in depth results in a perforating ulcer of the sole of the foot.

At this point it is still possible to treat and cure the infection, but this will require urgent application of antibiotics, and the patient will be in hospital for several weeks. Even when healed, the patient runs a high risk of further infection.

From the public health point of view, any study of the costs of this kind of care highlights the importance of prevention. Simply being in hospital for a few months can be more expensive than 20 years of anti-diabetic treatment. If we add the loss of earnings, the cost of rehabilitation and other expenditure involved in getting the patient back home, we can calculate that the total cost of six below-knee amputations is equal to the annual salary of eight nurses!

Unaware of the risks

Unfortunately, prevention is far from being as effective as we could wish. Diabetics themselves are often not aware of the risks they run. When they do know the risks, they tend to fall back on a denial of reality made all the easier because they don't feel any pain.

There are big gaps in the methodology of patient education. Even if they are given enough information to alert them to the risk despite feeling no pain, there is really no way of helping them to compensate for the loss of an alarm system. This problem of education is identical to that posed by leprosy and, as in the case of leprosy, there is urgent need for more research in this field.

Health professionals tend to consider the feet as a part of the body of only secondary interest, indeed surveys have shown how rarely they examine their patients' feet systematically. Treatment then starts far too late because the patient delays before consulting a doctor, or because the doctor considers the lesion as really not his but a surgeon's job, and finally because the surgeon may underestimate the lesion so long as an immediate operation is not needed.

The follow-up of patients with diabetes leaves a great deal to be desired. These include elderly

Health personnel need to be taught to examine feet. The soles of the feet lose their sensitivity in diabetes — and leprosy — so people may not notice they have hurt themselves.

WHO/Zafar

WHO/J.-P. Assal

Old, blind — and amputated. A drama that could have been avoided if adequate preventive measures had been planned in time.

people with a physical handicap, who can't walk normally or are confined to a wheelchair, or may have visual problems.

Everyone's business

Preventing amputations in diabetic patients is a major problem that goes far beyond simply knowing medical pathology and curative measures. Even though the latter aspect may be relatively well mastered by the physicians, a considerable effort has to be made to ensure an interdisciplinary approach within the health team itself. There ought to be better collaboration between doctors and nurses, they have to think what are the best means of looking after the patients, and they need to improve the methodology of education programmes so as to ensure the active participation of patients and their families.

But taking care of patients doesn't stop there. Other sectors need to be involved, such as the politicians, social insurance administrators, town-planners and architects, and certainly shoe manufacturers—since one-third of amputations are due to lesions that are provoked by ill-fitting shoes.

We will only succeed in controlling this grim complication of diabetes by ensuring that prevention projects involve all these partners. WHO is giving priority to preventive measures in the struggle against diabetes mellitus by an action programme in collaboration with the International Diabetes Federation, with the objective of halving the number of amputations in diabetic patients by 1995. All European governments have been invited to join in this effort, and it is hoped that similar action may be taken in other regions before long.

Even though our knowledge of diabetes stems from research, the strategies for treatment can benefit tremendously from an intersectoral approach that actively involves politicians, social insurance people and medical personnel, as well as patients and their organizations, in the planning of specific preventive measures. WHO plays the highly important role of a catalyst in this respect, and the success of programmes to prevent gangrene and amputations in diabetics could make this a model of interdisciplinary intervention for other chronic illnesses. ■

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Inter-Health and Di

abetes

Throughout the world and at every social, economic and cultural level, certain risk factors associated with our chosen life-styles can lead to chronic diseases which we call non-communicable. Detailed studies confirm that these factors include an unhealthy diet, lack of exercise, smoking, drinking too much alcohol, stress, and air pollution. Once thought of as a scourge only of the affluent countries, these diseases are spreading through the Third World as more and more people adopt unhealthy life-styles.

A single factor can contribute to a variety of diseases. Smoking, for instance, may cause lung cancer or lead to a heart attack, or it may result in emphysema and chronic bronchitis. Equally, a single disease may result from several quite separate risk factors. Cardiovascular diseases may stem as much from a diet too rich in fats and sugar as from lack of exercise or the stress of modern living. The table opposite expresses this in graphic terms.

To attack this problem at the root WHO and the international community decided to launch a global drive against life-styles that are harmful to health – the Inter-Health programme. At the heart of this programme lies the ancient proverb: Prevention is better than cure! So prevention will head the agenda in the coming decade, and preventive medicine will be seen as the pioneering medicine of the future.

One chronic disease, diabetes, figures high among the target diseases of Inter-Health since it can lead to such serious consequences as gangrene and amputation, blindness, or early death. Diabetes often has a hereditary component but it can also be provoked by unhealthy life-styles. Provided the health staff know what to look for, provided the patients – actual or potential – know how to manage their condition, provided difficulties in access to medicaments can be overcome, and provided everybody knows what constitutes a sensible diet, diabetics can lead a perfectly normal life. So the control of diabetes can serve as a prime example of what prevention can achieve in terms of increased well-being and the prospect of a longer life. ■

Life-styles influence health

This chart illustrates how a particular disease, for example, heart disease, can be the result of several types of life-styles and how each type of risk factor, for example, tobacco, can be the underlying cause of a number of diseases.

	Improper diet	Immoderate drinking	Tobacco	Lack of exercise	Stress	Pollution
Cardiovascular diseases						
Heart disease	✓✓	✓	✓✓	✓✓	✓✓	
Stroke	✓✓	✓✓	✓	✓✓	✓✓	
Hypertension	✓✓	✓✓	✓	✓✓	✓✓	
Cancer						
Colorectal	✓✓					
Lung			✓✓			✓
Oral		✓	✓✓			
Stomach	✓					
Respiratory diseases			✓✓			✓✓
Cirrhosis		✓✓				
Diabetes	✓✓	✓✓		✓✓	✓✓	
Osteoporosis	✓✓	✓✓	✓	✓✓		
Nutritional disorders	✓✓	✓		✓✓		
Gastric ulcers	✓✓	✓✓	✓✓		✓✓	
Fetal injury		✓✓	✓✓			✓

✓✓ = high risk
✓ = risk

Inter-Health fights life-style diseases

by Nikolai Khaltaev

The diseases of life-style—among them heart attacks, stroke, hypertension, cancer, pulmonary diseases, diabetes and osteoporosis—are the cause of 70–80% of deaths in the developed world.

In addition, according to WHO's estimates, these diseases are already the cause of 40–50% of total mortality even in developing countries. In a number of Latin American countries, deaths doubled in just three decades, as a consequence of affluence and economic growth. And 16 countries in the Western Pacific region are reporting more deaths from these noncommunicable diseases than from the communicable diseases. There are similar trends in other developing regions, according to WHO.

Third World countries, therefore, bear a double burden of the age-old communicable diseases—such as malaria, schistosomiasis, and other tropical diseases—as well as of the man-induced, noncommunicable diseases.

Such facts as these led WHO to establish Inter-Health, a programme aimed at urging nations to prevent diseases that are predicted to increase even more as the world's population ages. United Nations forecasts put at 343 million the numbers over age 60 in industrialized countries and 858 million in developing countries by the year 2020 — that is, in just under 30 years' time.

Inter-Health is based on the concept that diseases with common causes—namely, unhealthy life-styles—should be fought together, rather than separately, through a common strategy of prevention. To do so is economically and administratively beneficial to countries, especially to those in the Third World. At present their burden is intolerable.

Long-term epidemiological studies have linked behavioural and environmental risk factors to life-style diseases. Such factors as high cholesterol, hypertension, tobacco, obesity and lack of exercise are common to virtually all the major diseases of behaviour.

An obese person who smokes carries a double risk to health; so does a hypertensive person with high cholesterol levels. Studies show that 43% of males in Scotland, 40% in Finland, and 38% in Czechoslovakia are at such risk. Inter-Health was formally launched in Helsinki in January 1990. The capital of Finland was chosen deliberately in recognition of the success of the long-term health promotion campaign in North Karelia, which reduced the incidence of heart diseases by 40% in the space of a decade.

Drawing by Peter Davies

Stress? I dunno what it is!

To boost the WHO programme, a tele-conference in March 1991 was beamed to ten sites around the world from Alma-Ata in the USSR, from where the 1978 Declaration, launching the global goal of Health for All, was announced. Entitled "Inter-Health: fighting the diseases of life-styles", the tele-conference was produced by Interactive Events International with support from Sandoz Pharma AG, and with the scientific cooperation of WHO's Inter-Health programme.

Unlike communicable diseases, where a parasite, bacterium or virus transmits a single disease, one single bad habit entails multiple risks to health, as shown in the chart on the centre pages. For instance:

Diet. A diet high in animal fat, salt and refined sugar, and low in fresh vegetables and fruit, carries the risk of heart attacks, stroke and hypertension, as well as colorectal, stomach and breast cancers.

A lack of vitamins A and C, which are found in vegetables and fruit, carries the risk of chronic pulmonary diseases, notably emphysema and chronic bronchitis.

A lack of calcium, particularly in the diets of adolescent girls and post-menopausal women, carries the risk of osteoporosis, a condition of brittle bones.

Improper diets can also lead to gastric ulcers as well as to malnutrition, and obesity in turn carries the risk of cardiovascular diseases, diabetes, cancer and arthritis.

Immoderate drinking of alcohol carries the risk of liver cirrhosis, but again also of cardiovascular diseases, oral cancer, osteoporosis, diabetes and gastric ulcers.

Tobacco. A smoker runs the risk of heart attacks, stroke, hypertension, lung and oral cancers, osteoporosis, chronic pulmonary diseases and gastric ulcers.

Lack of physical activity. A sedentary individual runs the risk of cardiovascular diseases, diabetes and osteoporosis.

Air pollution. Those exposed to air pollutants run the risk of chronic pulmonary diseases and lung cancer.

Consequences

Here are WHO's estimates of the toll in death and suffering from the major life-style diseases:

- *Cardiovascular diseases.* Coronary heart disease, stroke and hypertension claim some 12 million lives each year, accounting for between a quarter and a third of all deaths globally. Far too often, victims are under the age of 65, dying in the prime of life. WHO believes that mortality can be cut by at least a half by changing to healthy life-styles, thus saving six million lives every year.

WHO/M. Jacot

Contrary to popular belief, cardiovascular diseases are a bigger killer than any major infective and parasitic disease. Mortality is on the rise in developing nations and in Eastern Europe. Despite declines in industrialized nations notably in Australia, Canada, New Zealand and Western Europe, they are still the number one killer in those countries.

• *Cancer.* There are some seven million new cases yearly and five million deaths. All over the world, lung cancer is now the most common form of the disease, since it overtook stomach cancer in the mid-1980s. The third most common form is breast cancer.

Six to seven out of ten cancer patients die from their disease in the industrialized world, and nine out of ten in the Third World. In absolute numbers, there are more cancer cases and deaths in the developing than in the developed world. And of the eight most common forms, five—uterine cervix, stomach, mouth-pharynx, oesophagus and breast—are more prevalent in developing countries. WHO draws attention to this little-known fact with its slogan: "Cancer is a Third World problem too."

Cardiovascular diseases and cancer already figure among the three leading causes of deaths, after the teenage years, in both the developed and developing world.

• *Tobacco-related diseases.* Between 2.5 and 3 million deaths annually are caused by smoking, or about one death every 10 seconds. Contributing to these figures are 100 000 deaths each in Africa and Latin America; 200 000 in Asia, not counting the two most populous countries on earth—China (reporting 300 000 deaths) and India; and 1.5 million in the industrialized world. In the USSR and the USA, each country suffers around 400 000 deaths every year from this cause.

Obesity, primarily the result of an unhealthy diet, entails the risk of heart disease, diabetes, cancer and arthritis.

• *Osteoporosis.* No worldwide estimates are available. However, United States figures show 24 million patients in that country alone, an indication of the dimensions of a problem that is associated with increasing life-spans throughout the world.

• *Diabetes.* WHO estimates that there are at least 50 million diabetics in the world. These persons are at high risk of hypertension and other cardio-

WHO/E. Mandelmann

Alcohol — false and fatal friend.

vascular diseases, as well as of kidney failure, and eye troubles including blindness.

Reducing the burden

The costs for the treatment and care of life-style diseases are astronomical, as the following examples show:
—in the USA, US$ 88 000 million for cardiovascular diseases in 1988, and $4000 million for chronic bronchitis, emphysema and asthma, in 1985;
—for stroke in England and Wales, £550 million in 1985; for hip fractures as a result of osteoporosis in the United Kingdom, £160 million.

No developing country can afford expenditures of these dimensions, even if they are scaled down proportionally. Since their resources in funds and personnel are scarce, they should aim at reducing risk factors by promoting healthy life-styles. This approach works in both developed and developing countries.

Mortality in heart diseases declined in the USA between 1968 and 1976, not so much from medical interventions as from growing awareness of the risks from unhealthy living. People reduced the cholesterol in their diets, and more smokers, mainly males, quit smoking. Health education is for everybody—those with and without diseases—and especially for those who eat fatty foods regularly, sprinkle their food lavishly with salt, smoke tobacco, and are sedentary.

The aim of the Inter-Health programme is to reduce the total burden of premature deaths, disability and illness from several major noncommunicable diseases through one programme. This is possible because the risk factors related to unhealthy living and an unhealthy environment are linked to biological factors, such as lipids and carbohydrate metabolism. Inter-Health utilizes, in a new practical manner, the available resources of a country for the prevention and control of major noncommunicable diseases and the promotion of health in entire communities. Inter-Health is thus the link between health promotion and disease prevention, the two complementary parts for WHO's goal of Health for All. ■

Dr Nikolai Khaltaev is Manager of WHO's Inter-Health Programme, WHO, 1211 Geneva 27, Switzerland.

WHO/E. Mahoemahn

Cleaner air at 10 000 metres

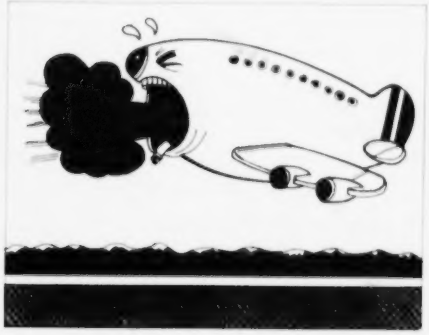
A smooth ride and passenger approval for the clean-air policy of airlines

by Claire Chollat-Traquet

Will the 1990s see a worldwide ban on all smoking aboard airliners, however long or short the flight? A trend in that direction is already well under way.

As early as 1983, a meeting of experts from the World Health Organization (WHO), the International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO) agreed that "a complete ban on smoking should be considered in flights of short duration."

Three years later, the United States Surgeon General reported that involuntary (passive) smoking "is the cause of disease, including lung cancer, in healthy nonsmokers."



Since then, the man-in-the-street has become much more aware of many things that threaten a healthy environment. In industrialized countries at least, smoking itself is a declining habit. And airliner designers, as they increase the seating density aboard planes, are having increasing technical problems in recycling the air to the satisfaction of all passengers when it is heavily laden with cigarette smoke.

One by one, the world's airlines are finding it both healthy and expedient to ban smoking from the passenger cabin. At first, the timid approach was to forbid smoking on short flights. But in October 1990, after a brief experimental period, Air Canada extended its smoking prohibition to all its transatlantic flights.

The move did not appear to annoy their clients. In fact, 35% of *smokers* admitted that they usually booked a nonsmoking seat, and most of them said they did not mind giving up cigarettes even on a long flight.

At least 51 major airlines have followed suit with either partial or total bans—mindful of fire risks as well as health considerations. As one executive of a major airline commented frankly: "Although we will invariably lose some customers who prefer to smoke on flights, we are confident we will gain more new ones who prefer a healthy cabin environment." ■

Dr Claire Chollat-Traquet is a Scientist with WHO'S Tobacco or Health Programme, WHO, 1211 Geneva 27, Switzerland.

WHO/Zafar

Are you sure your neighbour wants to smoke too?

Eat wisely to live longer

by Barbara Millen Posner and Huda Murad

The youthful profile of the world's population is changing. The United Nations estimates that by the year 2025, only a quarter of individuals worldwide will be aged under 14. Some 14% will be 60 years or older, and in the developed countries the proportion of older adults will exceed the 0 to 14 years age group. The current 380 million persons aged 60 and older will nearly double to 610 million by the turn of the century; 70% of the projected 1121 million who will be 60 years and over by 2025 are expected to live in the developing world.

In the past, the youthfulness of the world's population focused the attention of health policy-makers on the needs of infants and children. Programmes on birth control, maternal and infant nutrition, immunization against major infectious diseases, and related health services dominated the landscape. Relatively little attention was paid to the impact the success of such programmes would have on population demographics, such as reduced infant mortality, increased fertility, increased life expectancy and the overall aging of the population.

Eating for health

Particularly in industrialized countries, aging is often synonymous with the development of certain chronic diseases that could be prevented or delayed by better personal health practices. In the USA, for example, 80% or more of those 60 years and older are estimated to suffer from one or more of the following: coronary heart disease, hypertension, diabetes, cancer, osteoporosis, and arthritis. These chronic diseases have often been linked to modifiable life-style behaviours, as in the case of coronary heart disease, which has been associated with diets high in fat, particularly animal fat and cholesterol, cigarette smoking and insufficient physical exercise.

At the other extreme of the health continuum, a smaller but significant proportion of a nation's older population may be economically and socially disadvantaged, with extremely limited access to health services, and may suffer from malnutrition. So health policies looking forward into the next century will have to consider the prevention of chronic diseases, as well as the needs of those older persons whose social or economic circumstances put them at particular risk.

Drawing by Peter Davies

Living dangerously! Does she know?

Diet is one of the cornerstones of a health policy for successful aging and the prevention of chronic diseases. A recent study on certain life-style predictors of mortality from coronary heart disease showed that populations that experienced marked increases in such cases over the past 15 years, namely Bulgaria, Czechoslovakia, Greece, Hungary, Romania, Spain and Yugoslavia, had also increased their total fat intake, particularly of animal fats. Conversely, rates of coronary heart disease have declined in countries where cholesterol and fat intakes had decreased, as in Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, the United Kingdom, and the USA.

Two recent studies in the USA both recommended that preventive health measures such as proper nutrition should be instituted as early as possible, preferably in childhood or early adulthood. In fact the scientific evidence which links dietary practices with the prevention and treatment of major chronic diseases is increasingly abundant. There are particularly convincing data on the role of diet (low fat, particularly animal fats, and low cholesterol) in heart disease prevention. There are also data suggesting that eating foods with a higher fibre and lower fat content and possibly other nutrients helps to prevent certain forms of cancer (especially cancers of the large bowel and breast). Excessive calorie intake and the excess body fat that goes with it is also associated with the development of diabetes in adults. Of course, certain genetic determinants will predispose an individual to specific chronic diseases. Nevertheless, preventive dietary practices offer consumers a pivotal role to play in maintaining their own health.

The Food and Nutrition Board of the US National Research Council (NRC) recently concluded: "There is clear evidence that the total amounts and types of fats and other types of lipids in the diet influence the risk of atherosclerotic cardiovascular (heart) diseases and, to a less established extent, certain forms of cancer and possibly obesity. The evidence that the intake of saturated fatty acids and cholesterol are causally related to atherosclerotic cardiovascular diseases is especially strong and convincing."

The report points out the potential benefits of a dietary pattern that includes low fat products (like fresh fruit and vegetables, legumes and whole-grain cereals) and is more concentrated in food sources of carotenoids (dark green and yellow-orange vegetables and fruit) and ascorbic acid (in citrus and tropical fruits and berries). The study showed the relatively adverse effects of higher fat-containing animal foods (like fattier meats, cheeses and higher-fat dairy products), excess calories, alcohol and salt.

The NRC's recommendations can be summarized as follows:

- Reduce total dietary fat intake to 30% or less of calories. Reduce saturated fatty acid intake to less

WHO/L. Taylor

Obesity is a threat to children too. A balanced diet from childhood is the best guarantee of good health in adulthood.

than 10% of calories, and intake of cholesterol to less than 300 mg daily.

- Eat several servings every day of a combination of vegetables and fruit, especially dark green and yellow vegetables and citrus fruits.
- Increase the intake of starches and other complex carbohydrates by eating several daily servings of a combination of whole-grain breads, cereals, and legumes.
- Maintain protein intake at moderate levels.
- Balance food intake and physical activity to maintain appropriate body weight.
- For those who drink alcoholic beverages, limit consumption to the equivalent of less than one ounce of pure alcohol in a single day.
- Limit total daily intake of salt (sodium chloride) to 6 g or less.
- Maintain adequate calcium intake.
- Avoid taking (unnecessary) vitamin and mineral supplements.
- Maintain an optimal fluoride intake, particularly during periods of tooth formation and growth.

The US Surgeon General published a report on Nutrition and Health which describes the vital influence of diet on health and underscores the potential adverse consequences of certain dietary practices in relation to the major chronic diseases. Its recommendations are, in principle, quite similar to those of the NRC report. With reference to aging populations, the report states that "diet, exercise, and other personal and socioeconomic factors can help prolong good health for most people". It also noted that those older adults who are economically, socially and functionally disadvantaged are likely to have unique nutritional needs.

One particularly important issue raised in the Surgeon General's report is that education and counselling efforts designed to improve nutrition among consumers should give consideration to the social, cultural and psychological dimensions of food. Consumers' food preferences and habits are rooted in beliefs and customs, and are strongly influenced by such factors. Food is also a great source of pleasure in most people's lives. Education and counselling efforts must therefore consider the potential difficulties involved in changing consumers' food behaviour and attempt to overcome barriers to those changes. Practical dietary recommendations must be placed in the larger context of consumers' social and cultural frameworks, preferred types and sources of foods, and overall environmental circumstances.

Dietary guidelines

The US Departments of Agriculture and of Health and Human Services have developed practical recommendations, called the Dietary Guidelines for Americans, which are valid in many parts of the world and are summarized in the box on the next page.

As the world population has aged, chronic diseases have increasingly become major causes of death and disability. Many of these conditions, especially cardiovascular disease, certain forms of cancer and diabetes, can be prevented, minimized or delayed by paying attention to life-style behaviours, including improved diet, increased exercise and reduced tobacco consumption. As the 21st century approaches and the needs of adults, particularly older adults, are considered, preventive health practices offer considerable promise in promoting successful aging. Dietary practices which should be particularly emphasized are those that are lower in total fat intake (particularly saturated animal fat) and cholesterol; lower in salt, sugar, and alcohol; higher in complex carbohydrates, fibre, whole grains and cereals, and fresh fruits and vegetables; and those that are balanced in total energy and essential nutrients. ■

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WHO/E. Mandelmann

Eat a variety of foods

1. EAT A VARIETY OF FOODS:
   Choose foods from five major food groups:
   a) Vegetables
   b) Fruits
   c) Breads, cereals, rice and pasta
   d) (Skim or low-fat) milk, yoghurt and cheese
   e) Lean meats, poultry and fish; dried beans, peas, nuts and eggs.
2. MAINTAIN A HEALTHY WEIGHT:
   Check to see if you are a healthy weight (average range of weight related to your height). If not, set reasonable weight goals and try for long-term success through well-balanced habits of diet and exercise.
3. CHOOSE A DIET LOW IN FAT (30% OR LESS OF CALORIES), SATURATED FAT (ABOUT 10% OF CALORIES), AND CHOLESTEROL (300 mg OR LESS):
   Maintain a desirable level of blood cholesterol. In adults, this is under 200 mg per dl. If cholesterol levels are higher, it is recommended that appropriate medical advice is followed on diet and, if necessary, medications. Eat plenty of vegetables, fruits and whole grain products, lean meats, fish and poultry without skin, low fat and skimmed dairy products. Use fats and oils sparingly.
4. CHOOSE A DIET WITH PLENTY OF NATURAL FIBRE:
   In addition to fresh vegetables, eat more dried beans and peas, fresh and citrus fruits, whole grain breads and cereals, pastas and rice.
5. USE SUGARS IN MODERATION:
   Select food products that preferably are packaged without added sugars. Check food product ingredient lists for added sugars and avoid sucrose, brown sugar, raw sugar, honey, syrup, molasses, corn syrup and other sweeteners.
6. USE SALT AND SODIUM IN MODERATION:
   Use table salt sparingly if at all.

Adapted from Dietary Guidelines for Americans.

An apple a day keeps the doctor away; so do many other fruits!

Consider using foods that are naturally lower in sodium, such as fresh and frozen vegetables (rather than canned), cereals, pastas and rice cooked without salt; low-fat and skimmed milk or yoghurt rather than most cheeses; fresh lean meats, poultry, and fish rather than canned or processed items; fresh foods prepared without salt or salty condiments (like tomato sauce or soy sauce) instead of frozen dinners or packaged meals.

7. IF YOU USE ALCOHOLIC BEVERAGES, DO SO IN MODERATION:
   Women who are pregnant or trying to conceive should not drink, nor should people who intend to drive a vehicle, operate a machine, or perform an activity that requires attention and skill. Those who cannot limit their alcohol consumption should not drink.

Exercise!

by Peter D. Wood

Drawing by Peter Davies

Running puts you first in the race for a healthy life.

Much has been written over the years about the benefits or other of exercise. "For bodily exercise profiteth little", said Saint Paul; while President John F. Kennedy countered with: "Physical fitness is the basis of all other forms of excellence".

During the past two decades, we have learned much about the relationship between regular exercise of the aerobic type (brisk walking, jogging, cycling, swimming and many more) and the risk of developing several of the world's most debilitating (and costly) chronic diseases.

Dr Jeremy Morris, former Professor of medical statistics and epidemiology at the London School of Hygiene and Tropical Medicine, showed that the conductors (ticket-collectors) of London's red double-decker buses developed less heart disease over the years than did the drivers of the buses. This suggested that the conductors, who had to run up and down between decks, had been benefiting from even this form of exercise, compared with the sedentary drivers. Interestingly enough, the waist measurements of the trousers (judging by the uniforms they wore) were larger for drivers than for conductors, indicating that body fatness might also have something to do with increased risk of heart disease.

Ralph Paffenbarger, a distinguished epidemiologist, working with large numbers of United States college alumni, found that men who continued to do leisure-time exercise after their student years suffered 50% fewer heart attacks than their sedentary contemporaries. Even if other indicators of risk were present, exercise helped. For instance, a man with high blood pressure who exercised regularly was less likely to suffer a heart attack than another man with high blood pressure who did not exercise. There seemed to be an *independent* protective effect of exercise.

Quite recently, Steven N. Blair, an exercise physiologist and epidemiologist, looked at physical fitness in large numbers of men and women in Texas. Fitness was measured as the length of time an individual could walk or run on a treadmill before exhaustion set in. The level of exercise a person routinely maintains is not the same as fitness, but the two are usually closely associated. Blair followed these participants

L. Sirman ©

Ticket collectors in London double-deckers have fewer heart attacks than their drivers; they spend the day running up and down the stairs.

for eight years and found that, for both men and women, the more-fit groups had substantially less coronary heart disease than the less-fit groups. Much as Paffenbarger had found, this was true even after allowing for other factors such as age, smoking, obesity and blood cholesterol level. The benefits of fitness were particularly apparent in moving from the least-fit to the moderately-fit, suggesting that much benefit can be obtained when sedentary people adopt even a modest exercise programme.

Several large studies have shown that cancer of the colon and of the breast (in women) are less common in active compared with inactive people. The active tend to smoke fewer cigarettes than the sedentary, and so the tobacco diseases—bronchitis, emphysema, lung cancer—are less frequent among the exercisers. There is evidence that osteoporosis (thinning of the bones, with increased risk of hip and spine fractures, especially in older women) is reduced in habitually active people, and that some addictions and chronic psychiatric conditions are improved by regular exercise.

The list of chronic diseases that appear to occur less often in active people is long, and the evidence that adopting regular exercise will reduce the risk of developing these diseases is usually strong, if not conclusive. There are few instances where exercise has been reported to *increase* the risk of disease. Active people seem to live longer than similar but sedentary people. And there is indeed growing scientific evidence that this is the case.

How does exercise help?

Exercise improves health and well-being in a number of ways. Here are some of the more important effects that might be seen over a year in a sedentary person who adopts a regular programme of jogging, cycling or brisk walking, for instance. Most noticeable may be changes in body composition: body fat is progressively lost, and fat in the abdominal region is reduced. It now seems clear that fat in the tummy area is particularly related to risk of heart disease and diabetes. New converts to exercise often have to change their wardrobes because their waist size is much reduced, but it's well worth it. The exerciser becomes more fit—he or she can do more in life. Heart function changes so that more blood is pumped with each beat ("stroke volume" is increased), and the resting heart rate is reduced—both of them beneficial changes. Less well recognized is the increased diameter of the arteries supplying the heart ("coronary bore") during exertion in regular exercisers, which may help to reduce the probability of a dangerous obstruction

WHO/L. Taylor

Cuban grandmothers doing gymnastics in a park in Havana. Even a moderate increase in muscular activity contributes to better health.

developing in a coronary artery ("heart attack").

While all this is going on in our exerciser, important events are happening in the blood. The lipoproteins—minute particles that carry fat and cholesterol about the body—change, so that the amount of the "protective" high-density lipoprotein (HDL) cholesterol increases relative to the "atherogenic" or coronary disease-promoting low-density lipoprotein (LDL) cholesterol. The level of fat (triglycerides) in the blood is also dramatically decreased in our exerciser, which again is associated with a lowered risk of heart disease. The total amount of plasma in the exerciser's body increases, often by 10% or more.

The resting blood pressure and, perhaps more importantly, blood pressure during the stressful events of the day have probably dropped in our exerciser. His blood pressure will rise less in the weekly managers' meetings now that he is fit. These changes are very valuable to him, because they reduce his risk not only of heart disease, but also of stroke, where elevated blood pressure is the chief risk factor.

Adult-onset diabetes afflicts millions throughout the world. This disease is characterized by resistance to the action of insulin, abdominal obesity, high blood fat levels, low HDL cholesterol levels, and sedentariness. All of these facets of the disease are improved by regular exercise.

What sort of exercise?

The health benefits of regular exercise are extensive and should compel the many sedentary citizens of the world to take action. These persons are particularly subject to heart disease, stroke, cancer, diabetes and osteoporosis.

The type of exercise chosen is important. It must challenge the heart and lungs moderately, but not necessarily strenuously. Brisk walking, jogging, swimming and cycling at a moderate pace, and soccer are examples of beneficial exercises. Bowling, golf (especially using a motorized cart), and body-building are not very helpful. Choose a sport or exercises

that are convenient and enjoyable, so that you can continue with them even when you grow older. For instance, cross-country skiing is excellent for health, but is of practical use in certain parts of the world and only during the winter.

First, consider your preferences before even trying out possible sports and exercises. It is a good idea to combine this with what you must already do every day. Can you walk to work rather than ride? Or can you get off the bus several stops early and walk the rest of the way? Can you routinely walk up the stairs rather than ride the elevator in your building? Every little bit helps. Try to find a companion with similar exercise aims and capacity.

Some exercises (for instance, walking to work) can be done on a daily basis. Other sessions should be fitted into your life three to five times each week. Regular "days off" are good for many people to avoid boredom and overuse. Each session might be for 30 minutes to one hour, but this will depend on the activity. Three sessions of 20 minutes each, if more convenient, will be about equivalent to one session of an hour.

Being in good physical form helps to overcome the stress of the weekly meeting.

Deciding on the proper *intensity* of the exercise can worry many people. It is *not* necessary to run marathons or play squash vigorously to gain substantial health benefits. A very sedentary, overweight middle-aged person who adopts a modest walking programme probably has the most to gain. You are the best judge of intensity; aim to exercise *moderately*, as it feels to you. An exercise programme should be *progressive*. But as you get fitter you are able to achieve higher energy expenditure levels and yet still feel that you are exercising "moderately".

Too old to exercise?

The adverse effects of insufficient physical activity worsens with age: heart and lung functions deteriorate, muscle mass is lost while fat is gained, and a variety of metabolic and psychological problems may begin to occur. In fact it seems probable that part of the aging process in many societies is really the result of the progressive sedentariness that so commonly accompanies aging.

This idea is supported by studies on older athletes, who retain many of the physical attributes of the young. Runners in their sixties, for instance, have the body composition and exercise capacity of much younger (but less active) men. Research shows that a progressive programme of low-level exercise in older people can partially reverse the ravages of many sedentary years, and to some degree restore endurance capacity and muscular strength. Even small increases in strength and endurance can make a substantial difference to the quality of life in old people, for example, in their ability to rise from a chair, lift objects, and walk about in the house.

Old age often brings with it arthritis and the weakened bones of osteoporosis, among other infirmities that limit the ability to exercise. Exercise programmes must therefore be carefully tailored to the abilities of elderly people, a modest increase in muscular activity often being all that is needed for the very oldest persons.

Health agencies must recognize that regular exercise is of enormous importance to vast numbers of people. Every individual will benefit greatly in improved health by ensuring adequate regular exercise for himself and his family. ■

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Better nutrition for Soviet workers:

The Elektrostal project

by Elena Stroot

The problems of nutrition are identical in almost all developed countries, and the USSR is no exception. Excessive consumption of animal fats, salt and sugar, and insufficient consumption of fruit and vegetables, together with a lack of physical activity, increase the risk of noncommunicable diseases, such as cardiovascular diseases, chronic lung diseases, diabetes and cancer. Unfortunately, it is almost impossible to convince food producers of this risk at present in the USSR, because of the high level of monopolization in the food industry and the lack of motivation for manufacturers to improve the quality of their products.

We have now embarked on a comprehensive programme aimed at preventing noncommunicable diseases in working collectives as a part of the Soviet Union's contribution to the countrywide integrated noncommunicable diseases intervention programme (CINDI), a European variant of the global Inter-Health programme, which involves 14 countries of the WHO European Region plus Canada. Through this programme we have made several attempts to change nutrition habits at the "Elektrostal-tiazhmash" factory, which produces heavy industrial equipment. This enterprise lies 54 kilometres east of Moscow and employs a total of about 12 000 workers.

Rational nutrition

A screening study was conducted there in 1987, in order to evaluate the prevalence of major noncommunicable diseases in connection with risk factors, and to study the general epidemiological situation in this factory, which is very representative of Soviet enterprises. During individual talks and consultations in this study we paid much attention to the problems of rational nutrition, trying to convince people to change their habits and life-styles.

It turned out that people are generally well informed about what healthy nutrition is, about the food products they should consume, and about what the necessary amounts and combinations are. But they cannot follow these requirements because of lack of available food, family traditions, lack of time, high prices and so on.

Clearly, individual recommendations alone are not enough to bring about a real change in the dietary habits of workers. On the other hand, it is truly very difficult for them to make a proper choice and to eat healthy foods when there are shortages.

We next carried out at the factory various group studies on overweight persons. It was important work, but again it obviously did not influence the conditions under which food is prepared or its quality in the work canteens. Such studies rarely have a real influence on the food traditions of a given society.

In an attempt to improve the quality of food served in the canteens, our specialists made a special effort with the cooks, and explained to them, for

WHO/E. Stroot

WHO/E. Stroot

The Soviet Union's Elektrostal project is collaborating with the Danish National Food Agency. The author is discussing the project with an Elektrostal physician. Left: *Working together for the improvement of nutrition at the workplace.*

example, the importance of replacing dishes containing highly saturated animal fat with dishes containing polyunsaturated fat from fish and vegetable oils. Unfortunately such attempts were again doomed to failure, since in the USSR the process of preparing meals tends to be strictly determined by state standards and by mass catering recipes.

We had to face the fact that these attempts were too fragmentary and could not in themselves bring about a real improvement of nutrition for the factory population. It became obvious that such problems had to be solved in a more complex way, and would involve large investments aimed at creating both the material and psychological conditions for healthy nutrition.

It has proved possible to arrange this in the context of large working collectives, such as the Elektrostal factory, provided the improvement of nutrition is directly linked with the correction of unhealthy habits and traditions. This can be done with the help of WHO experts, who are trained to work on the basis of strategies for health for all, in particular in the framework of the CINDI programme.

Under market conditions, enterprises have to concern themselves with complex and long-term health promotion for their workers in order to reduce the loss of man-hours from illness and disability, and to increase the stability of the company.

The project undertaken at Elektrostal is a joint effort of the enterprise itself, involving all its sectors and calling for quite substantial material resources, including hard currency. The USSR Research Centre for Preventive Medicine is the methodological centre and supervisor of the project, and the Mass Catering Centre of the Danish National Food Agency, which is one of WHO's Collaborating Centres, provides expertise in the field of equipment and marketing.

The ultimate aim of the project is to ensure healthy nutrition for the workers on the basis of modern technology and recipes, along with high quality of service. In particular, it is trying to solve three main problems:

— improvement of the food supply to workers' canteens;
— complete reconstruction of the canteens, including the purchase of modern equipment, which will make it possible to change the technology and recipes of the meals prepared;
— continuous training of the staff, without which there can be no long-term success in creating healthy nutrition habits among the population at large.

Improving conditions

The conclusions that can be drawn from this experiment so far show that it is not possible to solve the problems of healthy nutrition through the efforts of health workers and nutritionists alone. Intersectoral cooperation in this field is absolutely essential. Of course, health workers have a primary responsibility for nutrition, because they are familiar with the direct connection between nutrition and health. It is up to them to guide public opinion and take part in decision-making related to the strategy, which needs to be organized at both the global and local level.

At the local level, it should be possible to introduce a comprehensive programme for nutrition improvement in the working collectives. This should include obtaining the necessary materials, training the staff, undertaking health education aimed at the general population, and improving the meals service. Scientists, specialists, managerial leaders and the workers will need to combine their efforts to improve the quality of food and to create the necessary conditions for factory canteens to be properly run.

If the nutritional status of a workforce is to be improved, it must be related to the problem of changing dietary habits and traditions. Creating favourable conditions for improvement and educating people in sensible nutrition are two tasks of equal importance. And it is useless to attempt to do one without the other. ■

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NEWSPAGE

Editor: Philippe Stroot

The pill and cancer: no cause for alarm

More than 60 million women around the world, including over 38 million in developing countries, are now using oral contraceptives. The possibility of an increased risk of tumours linked with "the pill" has been a recurrent cause for concern.

A WHO Scientific Working Group was convened in December 1990 to examine all the relevant evidence and prepare an authoritative report on the present state of knowledge. The members of the Group confirmed the beneficial effects of oral contraceptives in reducing the risk of ovarian cancer, endometrial cancer and biopsy-proven benign breast tumour.

These contraceptives increase the risk of benign liver tumours, but fortunately this is a very rare complication. Long-term use of oral contraceptives has also been reported to increase the risk of liver cancer in countries where this disease is rare, but the WHO study found no association in developing countries where it is common.

Photo WHO/P. Poulet

Oral contraceptives are safe

With regard to cervical and breast cancers, most studies suggest no overall association. Some studies have found weak associations between long-term use of oral contraceptives and the risk of either of these cancers among various subgroups of women. At present, it is impossible to determine whether these associations are due to true biological effects, better detection of the disease, or certain characteristics specific to the users of these contraceptives. The Group recommended that there should be no change in family planning policies concerning the use of oral contraceptives. ■

The Director-General in the Islamic Republic of Iran

In response to a long-standing invitation from the Government, the Director-General of WHO, Dr Hiroshi Nakajima, visited the Islamic Republic of Iran from 14 to 18 March 1991. He was accompanied by the WHO Regional Director for the Eastern Mediterranean, Dr Hussein A. Gezairy.

According to local government sources there were, at that time, 30,000 refugees from Iraq in the Islamic Republic of Iran, mainly in Khuzestan Province. During his visit on 16 March to the camps established by the Government to cope with the influx of refugees, the Director-General saw over 7000 recently arrived refugees, most of them children, women (including a relatively high number of

Photo WHO/Hiroshi Nakajima

Iraqi refugees arrived by the thousand at the camps in the Islamic Republic of Iran

Drawing by Peter Davies

To our readers

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The Editors

pregnant women) and elderly persons, some of them suffering from wounds.

The Director-General informed the Secretary-General of the United Nations of his findings, with a view to providing coordinated humanitarian relief to the civilian population affected by the Gulf conflict. ■

You could help save a mother's life

In many countries some women still die after they have a baby because of infections. Such infections are easily prevented: (1) the midwife, doctor or birth attendant must first wash their hands with soap and water, (2) the umbilical cord must be cut with a clean tool and the stump kept clean, (3) the birth must take place on a clean surface.

These "three cleans", as the Chinese call them, have been successfully carried out by the "barefoot doctors" — village health workers — in China, with the result that there are far fewer infections associated with childbirth than there used to be.

To ensure a safe delivery a few simple items are needed:

— soap and nail sticks for keeping hands clean,
— a clean razor blade, cord ties and cotton balls for cutting the umbilical cord,
— a plastic sheet (one metre square) or a towel or bedsheet to serve as a clean delivery surface.

These items can easily be packed together in what WHO refers to as the simple delivery kit, which can be used by traditional birth attendants during home deliveries. Your local health or community centre may need a helping hand in preparing such delivery kits. WHO encourages members of youth groups, women's groups and other community groups to help prepare and distribute the kits locally. A useful booklet called "Guidelines for introducing simple delivery kits at the community level" is available free of charge from: Maternal and Child Health Unit, Family Health Division, World Health Organization, 1211 Geneva 27, Switzerland. ■

Newsbriefs

• **WHO supports the helmet.** *More than three million deaths occur throughout the world every year because of accidents, which account for 7% of global deaths from all causes. A United Kingdom study has shown that half of the cyclists who die in accidents have head injuries. The problem is particularly serious in developing countries, where people tend to buy more motorcycles than cars because they are cheaper. WHO has now launched a campaign to promote the wearing of crash helmets, not only by riders on two wheels but also by people who engage in such sports as boxing, parachuting, horse-riding, ice hockey, skating and skate-boarding.*

• **Health and the Rights of Man.** *The African Commission for Health Professionals and the Rights of Man (CAPS) is a new nongovernmental organization created two years ago in Brazzaville, Congo. Particularly active in the present period of political upheavals in Africa, the Commission has the aim of furthering social, economic and cultural development by promoting health and human rights. Its President is Dr Ousmane Keita, of Guinea, a former member of WHO's Executive Board. CAPS is at present setting up in Guinea an African centre for the treatment and rehabilitation of victims of repression and torture.*

• **Prevention is better than cure.** *This is the watchword of WHO's Inter-Health programme, which promotes the adoption of healthy life-styles in order to prevent many of the so-called "diseases of civilization," such as heart attack, cancer, diabetes, hypertension and osteoporosis. During the second meeting of the heads of this programme, held in Alma-Ata, capital of Soviet Kazakhstan, in March 1991, a teleconference linking 15 cities around the world by satellite highlighted the struggle against these diseases linked to life-styles. The multinational conference pointed an accusing finger at unbalanced diets, smoking, alcohol abuse and lack of physical exercise, as well as at stress and pollution. The writing is on the wall: if the world does not choose healthy ways of living, these diseases will run riot – and no country will be spared.* ■

A programme against the disease of life-styles

WORLD HEALTH ORGANIZATION

In the next issue

Good food is not only the basis of good health. It is also directly linked with most aspects of human development, whether psychological, economic or social. The July-August issue of *World Health* will offer an overview of the most important aspects of diet and nutrition.

If you would like to obtain the catalogue of WHO publications, or receive sample copies of other WHO periodicals which you want to evaluate before placing a subscription, please contact: World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland

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